



**West Lake Landfill: scope of work for SSFS**  
Dan Gravatt to: Audrey Asher

09/06/2012 09:34 AM

Audrey, per our phone conversation this morning, I am attaching the response from Paul Rosasco on the SSFS scope below. Also, here is what I had written in my notes from our call with the PRPs on June 4, 2012 asking them to do the NRRB's additional work for the SSFS. (Recall that prior to this call, we had already asked the PRPs to conduct an additional round of groundwater sampling and perform an analysis of apatite as a treatment alternative, and they had previously agreed to do those two tasks.)

- Partial excavation alternative plus calculation of risk reductions resulting from such a remedy ; volume recalculation after removing the two deep borings with "suspect" gamma logs (WL-210 and -235).
- Apatite treatment re-evaluation, both for waste stabilization and as a contingent groundwater remedy if needed in the future.
- Evaluate alternative landfill cap designs.
- Evaluate groundwater fate and transport.
- Provide a cost estimate using the 7% discount rate.

I specified during the call that I thought this additional work should form an addendum to the SFS workplan to formalize the scope and details.

Sincerely,  
Daniel R. Gravatt, PG  
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Principles and integrity are expensive, but they are among the very few things worth having.  
----- Forwarded by Dan Gravatt/R7/USEPA/US on 09/06/2012 09:06 AM -----

From: "Paul Rosasco" <paulrosasco@emsidenver.com>  
To: Dan Gravatt/R7/USEPA/US@EPA, "victoria warren" <vwarren@hrtc.net>  
Cc: Audrey Asher/R7/USEPA/US@EPA, "Merrigan, Jessie (LG)" <JMerrigan@LATHROPAGE.COM>, "Neitzel, Charlotte" <Charlotte.Neitzel@bryancave.com>, "Whitby, Kathleen" <kwhitby@spencerfane.com>, "Golian, Steven" <Steven.Golian@em.doe.gov>  
Date: 08/05/2012 01:24 PM  
Subject: RE: West Lake Landfill: path forward on the Supplemental SFS

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Dan,

The group has been working on arranging funding to perform the work and I have been working on determining the scope of work, arranging work assignments, etc. to perform the work. The following is a summary of the status of our efforts.

1. Alternative Excavation Volume – Revision to the excavation volume to eliminate deeper intervals in WL-210 and WL-235 – No questions. We are proceeding on working on this item.
2. Partial Excavation Alternative – We are working on identifying criteria to define the parameters to be used to define the extent and configuration of the waste materials to be included in the partial excavation alternative. We will share this with you when we finish. The only question we have so far is would you like us to evaluate two alternatives Partial Excavation with Offsite Disposal and Partial Excavation with Onsite Disposal?

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3. Apatite Treatment Technologies – I have been discussing potential applications of apatite and/or phosphate solutions for possible treatment of waste materials and/or groundwater with DOE personnel with experience with these technologies. So far the only application we have found that even remotely could apply to West Lake is construction of a permeable reactive barrier for treatment of groundwater. We will continue to evaluate this technology and will prepare a technology evaluation for inclusion in the Supplemental SFS Report. Based on the information obtained to date, this technology will likely be screened out based on the fact that it applies to groundwater and we don't have a groundwater issue. We will identify it as a possible (contingent) technology that could be used in the event that a groundwater concern were to occur in the future; however, we don't anticipate developing a remedial alternative based on this technology.

4. Use of a 7% Discount Rate for the Present Value Calculations – We are proceeding with this work and do not have any questions for you at this time. Because of the mixed (Federal and private) nature of this site, the currently low returns on investments combined with the fact that most of the costs are short-term (i.e., construction related costs), and the fact that the biggest impact of changing the interest rate would be to the Fiscally-Constrained (Federal lead) cost estimates, we will include present value calculations based both on the 7% rate and the OMB rate in the Supplemental SFS report.

5. Alternative Landfill Cap Designs – We have been evaluating possible alternative landfill cover designs. Most of the general descriptions of alternative cover designs you provided are oriented toward reducing infiltration into the waste mass. Because the landfill has not had a significant impact on groundwater, we are struggling with how to evaluate the possible benefits of such enhanced cap designs involving use of synthetic materials (i.e., combined RCRA Subtitle C and UMTRCA cover design). Also, you had suggested that we look at possible use of an Evapotranspiration (ET) Cover. EPA guidance indicates that ET covers are generally applicable in arid to semi-arid regions which would not include the St. Louis area. If we were to consider use of an ET cover as an alternative to the ROD-Remedy cover, we likely would need a much thicker cover to provide sufficient moisture storage within the cover during the wet seasons. A thicker cover would necessitate increased regrading (cut and fill) of the waste material along the toe of the landfill to provide space for construction of a thicker cover. We are struggling with this option given all of the comments we received on the prior SFS to minimize the amount of waste regrading. Because the only difference expected from the alternative cover designs using synthetic materials or possibly an ET cover compared to the design included in the ROD-Selected Remedy is a possible reduction in infiltration, it appears that the best approach would be to complete some of the initial Fate and Transport Modeling (see discussion below) to determine what the potential infiltration and leaching may be to provide a framework for evaluation of possible alternative cover designs.

6. Fate and Transport Modeling – After significant thought about how to proceed, we believe it would be best to use an iterative approach to the Fate and Transport Modeling, specifically to begin with a geochemical model to assess the potential mobility and potential leachability of the radionuclides, followed by (if necessary) an unsaturated zone transport model, followed by a site-specific groundwater flow and transport model (if the prior two models indicate that a potentially measurable impact to groundwater may occur), followed (if

necessary) by a regional groundwater flow and transport model to address possible transport to the river; and if necessary a surface water flow and transport model to address possible transport within the river. Based on my experience with other projects and the current conditions at West Lake, we do not expect that all of these models will be needed so we would like to proceed using the phased, iterative approach described above. I am in the process of working with a geochemist to develop an approach for the geochemical model.

Hopefully, this answers your questions regarding the status of development of scopes of work. If needed, we can discuss this further next week when we are at the site. See you Monday morning

**From:** Dan Gravatt [mailto:Gravatt.Dan@epamail.epa.gov]

**Sent:** Monday, July 30, 2012 12:00 PM

**To:** Paul Rosasco; victoria warren

**Cc:** Audrey Asher

**Subject:** West Lake Landfill: path forward on the Supplemental SFS

Paul, Victoria,

I have yet to see a scope of work for the additional work the West Lake OU1 PRPs agreed to do after our teleconference on June 4th. This work included, among other items, more detailed evaluations of the partial excavation alternative, alternative landfill cap designs, and treatment technologies. Can you tell me when EPA can expect to receive a scope of work for this additional work (which I'm referring to as the Supplemental SFS) or a list of questions that you need answered before producing the scope of work? Once we receive that, EPA expects to issue a letter formalizing the additional work and referencing the additional work clause of the AOC.

Sincerely,

Daniel R. Gravatt, PG

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